REMARKS

INTRODUCTION

Claims 1-6 were previously pending and under consideration.

Claims 7-21 are added herein.

Therefore, claims 1-21 are now pending and under consideration.

Claims 1-6 are rejected.

Claims 1-6 are amended herein.

No new matter is being presented, and approval and entry are respectfully requested.

REJECTIONS UNDER 35 USC § 103

In the Office Action, at pages 2-5, claims 1-6 were rejected under 35 U.S.C. § 103 as being unpatentable over Cidon in view of Lee. This rejection is traversed and reconsideration is requested.

Claim 1 recites "packet header including a destination address list that indicates a plurality of destination addresses and a distribution bit map including a plurality of bits each corresponding to a respective destination address to which the packet is to be transferred and indicating whether or not the packet has already been distributed to its respective destination address". See also claims 5 and 6, which also recite plural addresses in the packet.

The rejection compares the ANR labels 60-62 of Cidon to the destination addresses recited above. However, the ANR routing labels in Cidon relate to non-multicast addresses for use in reaching the beginning or entrance of a set of nodes which together constitute a multicast tree. That is to say, the elements 60-62 of Cidon are a series of addresses that are valid only before multicasting begins. The purpose of Cidon is to use unicast routing (ANR labels) to send a packet to a multicast tree, and multicasting then begins when the tree is reached. Thus, the ANR labels are consumed from Cidon's packet as it is non-multicast routed toward its destination multicast tree. When multicast routing begins in Cidon, the ANR labels no longer exist. Cidon

states that the last-consumed ANR label is also the entry node for the multicast tree (col. 8, lines 27-30). Finally, Cidon's Summary states that "[t]he ANR labels are used to direct a packet to one network node of a particular multicast tree. The TMM address is then used to direct the packet to all of the end nodes of the multicast tree". In other words, Cidon states that its ANR labels are mutually exclusive with the multicast routing.

Withdrawal of the rejection of claims 1, 5, and 6 is respectfully requested.

The rejection is also traversed because a tree address cannot be replaced with a bit map of Lee, as suggested by the rejection. If a tree address is replaceable with a bit map, then there would be no reason for Lee to use both a tree address and a bit map. In Lee, there is no discussion or suggestion that the bit map can replace the tree address. Nor is there a suggestion that the tree address can be omitted in the presence of the bit map. Furthermore, the bitmap of Lee is not even a part of the multicast packet, rather the "bitmap ... 51a is stored in an external memory 51b", where "[t]he multi-cast identifier field is used to look up the multi-cast lookup table or bitmap ... 51a" (col. 8, lines 6-10). In other words, Lee performs multicasting by including a multicast flag in a cell, which triggers a lookup to a bitmap prestored in the router, not the packet.

Withdrawal of the rejection is further respectfully requested.

Cidon is also silent regarding exchangeability between a tree address and a bit map. In Cidon, the tree address in a packet is only an identifier that identifies a predefined set of graph-forming nodes ("a second portion of the routing field [the tree address] contains the multicast subset identifier which can then be used to deliver the packet to all of the members of the multicast subset" because each node has the predefined nodes of the tree, Abstract). Cidon also notes that "multicast trees are predefined to connect a desired subset of user stations ... The multicast tree is identified in the routing field by a tree address [routers on the path use the identifier to route to a next router]", col. 1, lines 50-63. The tree address is referred to throughout Cidon as an identifier and a single address; it does not by itself comprise plural different addresses but rather serves as an identifier to allow a router to know which tree is being multi-cast on (the tree is predefined in the router itself as in a routing table or the like).

Withdrawal of the rejection is further respectfully requested.

Furthermore, no combination of features in Cidon and Lee can lead to the address list

and distribution bit map recited in claims 1, 5, and 6. Consider for discussion a case where the ANR of Cidon is combined with the bit map described in Lee. Then, the packet will be delivered only to the destination indicated by the ANR label (e.g. 62 in Fig. 6). That is, it will only be delivered to the first/entrance node of the multicast tree, but not further. The packet would not reach its ultimate destination.

Withdrawal of the rejection is further respectfully requested.

The feature of claim 3 (branching regularity mark) is now recited in new claim 7. Cidon does not discuss or suggest continuously arranging bits that indicate the undistributed nodes. As discussed above, neither Cidon nor Lee recite a bit map in a packet with corresponding different addresses. Allowance of claim 7 is respectfully requested.

Claim 4 recites using a bit value to render an address in the packet's address list meaningless for further routing. This not the same as deleting an ANR label, as proposed in the rejection. In claim 4, the value of the bit corresponding to the address to which the packet has already been distributed is changed into a value that renders the address meaningless for routing. However, the address(es) itself remain(s) in the packet, which can have value for other purposes such as analyzing routing history, allowing a recipient to identify the other multicast recipients, etc.

DEPENDENT CLAIMS

The dependent claims are deemed patentable due at least to their dependence from allowable independent claims. These claims are also patentable due to their recitation of independently distinguishing features. For example, claim 18 recites "a regularity inspection packet for checking whether or not the destination address list is in branching regularity where the bits in the bit map are sequentially arranged such that bits indicating undistributed nodes are continuously arranged". This feature is not taught or suggested by the prior art. Withdrawal of the rejection of the dependent claims is respectfully requested.

NEW CLAIMS

New claims 7-21 have been added to clarify aspects of the present invention. Claims 8-20 have been newly added based at least on the description at page 8 of the present specification. Reference is made at least but not limited to page 8, lines 1 to 7 for claim 7; page 8, lines 8 to 18 and page 17, lines 3 to 13 for claim 8; page 18, lines 5 to 10 for claim 9; page 18, lines 11 to 18 for claim 10; page 16, lines 19 to 23 for claim 11; page 8, line 25 to page 9, line 7 for claim 12; page 8, line 15 to page 9, line 7 for claim 13; page 9, lines 8 to 12 for claim 14; page 9, lines 13 to 21 for claim 15; page 21, lines 4 to 9 for claim 16; page 21, lines 10 to 17 for claim 17; page 21, line 24 to page 22, line 5 for claim 18; page 10, lines 20 to 25 for claim 19; page 23, lines 1 to 6 for claim 20; and page 6, lines 8-14 for claim 21.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 25 FEB 2004

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